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# Zero2Story: Novel Generation Framework for Anyone

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## Abstract

This paper explores a novel approach to collaborative storytelling where an AI generates paragraphs and provides branching options for human authors to shape the narrative in a turn-based style. It also discusses the integration of three generative AI technologies for text, image and audio within a unified platform, offering new creative possibilities across multiple media formats.

## 1 Introduction

The advent of large language models has profoundly transformed the landscape of text composition, enabling individuals with varying backgrounds and skill sets to engage in tasks previously reserved for domain experts. This technological advancement has democratized content creation, bridging the gap between novices and professionals(1)(2). Nevertheless, especially in the context of novel writing, individuals devoid of prior writing experience may still grapple with the initial challenge of knowing how to embark on their creative journey.

To solve such problems and enhance the writing experience, it is imperative to prioritize approaches that foster enjoyment throughout the creative process. Zero2Story<sup>1</sup> is a framework that enables iterative story generation through human-AI collaboration. It provides a range of choosable options for the human writer to guide the narrative, and seamlessly generates subsequent paragraphs that maintain a natural and coherent connection to the preceding content. This approach, similar to tabletop role-playing games (TRPGs), empowers individuals of all writing experience levels to engage in the creative process of storytelling and craft engaging and captivating narratives.

## 2 Method

The Zero2Story framework introduces a structured three-step approach to narrative generation. Initially, background information encompassing genre, locale, and mood is selected, each with ten distinct items. Based on this, four characters are chosen, detailed by name, age, MBTI, and personality. The framework then employs Stable Diffusion to generate images aligned with the background and character traits, enriching the narrative ambiance.

Upon setting the background and character configuration, the framework crafts the opening paragraphs of the narrative while proposing selectable narrative paths to the writer. As a choice is made, subsequent narrative segments are generated that seamlessly dovetail with the preceding text, ensuring a coherent progression. This interplay introduces a collaborative dynamic between the system and the writer, enhancing the storytelling process.

Addressing the challenge of random text generation, Zero2Story provides mechanisms for the recurrent refinement of the narrative and selectable actions through custom prompts from the writer. Additionally, it facilitates the generation and embedding of images and audio snippets via Stable

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<sup>1</sup><https://github.com/coding-pot/Zero2Story>

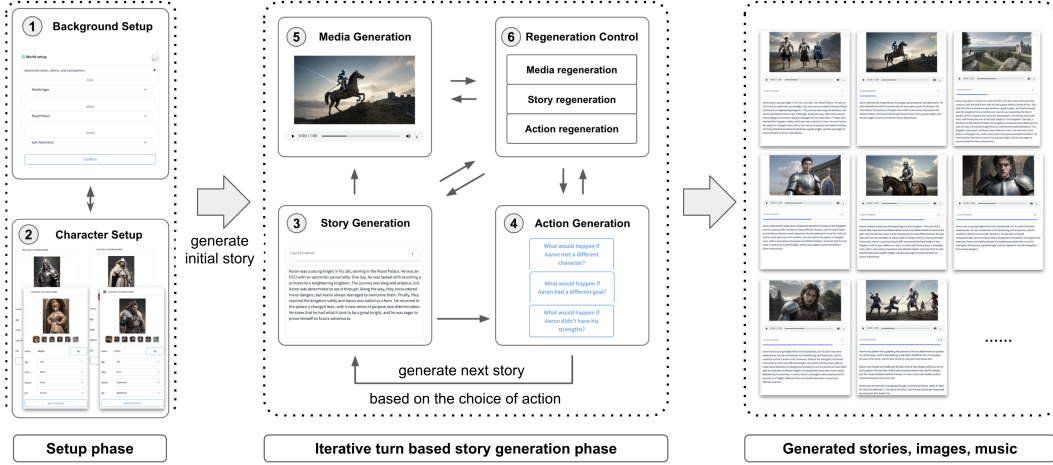


Figure 1: Zero2Story framework overview.

Writer sets the basic settings with ① background and ②, then the framework suggests ③ story, ④ actions, and ⑤ media in each turn while giving ⑥ regeneration control to the writer until getting satisfactory results.

Diffusion and Music2Gen models, respectively. The narrative and media generation heavily leverage the PaLM2 API, a large language model, ensuring a compelling and immersive narrative experience.

### 3 Results

The collaborative aspect of the Zero2Story framework provided real-time narrative guidance to writers. The selectable narrative paths facilitated a structured narrative progression, ensuring continuity and reducing inconsistencies in the evolving story arcs. Furthermore, these paths simplified the storytelling process, making it an enjoyable endeavor akin to a game, thereby democratizing narrative creation for ordinary individuals. The integration of multimedia elements enriched the narrative ambiance. The recurrent refinement mechanisms mitigated randomness with preliminary feedback from a user-centric evaluation underscoring the framework’s efficacy in streamlining the narrative generation process while retaining creative control.

Through a few dozens of experiments, this framework adeptly generates short story text but struggles with extended novels due to their complexity. Maintaining character consistency across diverse settings while advancing the narrative proved challenging.

### 4 Conclusion

The Zero2Story framework showcases a promising avenue for collaborative storytelling between human authors and AI, simplifying the narrative generation process especially for novices. While proficient in short story generation and enhancing narrative ambiance with multimedia elements, it faces challenges in longer narratives and character imagery consistency across diverse settings. This paper underlines the potential of integrating generative AI technologies in fostering a more interactive and enriched storytelling experience, albeit with room for further refinements to tackle identified challenges.

### References

- [1] Mirowski, Piotr and Mathewson, Kory W and Pittman, Jaylen and Evans, Richard. (2023) Co-Writing Screenplays and Theatre Scripts with Language Models: An Evaluation by Industry Professionals. Proceedings of the 2023 CHI Conference on Human Factors in Computing Systems, pp.1-34.
- [2] Ann Yuan, Andy Coenen, Emily Reif, and Daphne Ippolito. (2022) Wordcraft: Story Writing With Large Language Models. In 27th International Conference on Intelligent User Interfaces. ACM, Helsinki Finland, 841–852.

## 5 Ethical concerns

The emergence of AI in literature brings a ethical dilemma centered on authorship and attribution. As it crafts rich narratives, the conventional boundaries of authorship begin to blur. The quandary arises in discerning the true creator of a novel: whether it is the human authors of the texts behind the training data, developer behind Zero2Story, the individual who fine-tuned its intricacies, or Zero2Story itself. These ambiguities not only muddle the process of assigning credit, but also unsettle our long-held beliefs about creativity and originality. A pragmatic solution could be to clearly define AI's role in the artistic process. By discerning if Zero2Story is a tool or a primary creator, attribution becomes clearer. This ensures rightful credit for both human and AI contributions, addressing the ethical issues in AI-generated literature.

Additionally, employing AI in storytelling introduces ethical concerns, mainly potential bias and discrimination within AI models, that require careful examination. The adoption of AI-driven turn-based storytelling and the integration of generative AI technologies raises several ethical considerations that merit careful scrutiny. First and foremost is the potential for bias and discrimination embedded within AI models. As AI generates content and provides branching options, it may inadvertently reflect and perpetuate biases present in the training data, leading to biased narratives that reinforce stereotypes or marginalize certain groups. Ensuring fairness and inclusivity in AI-generated content is paramount, demanding ongoing vigilance in data selection and model training.